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ABSTRACT

This report brings together two issues: quality of care measurement and health care for the disadvantaged. The main question that is asked is whether an improvement in the quality of health care delivered to the disadvantaged will contribute to equalizing their health status. A review of the literature points to the following four conclusions: (1) differentials in health status persist between the disadvantaged and those not disadvantaged, often to a large degree; (2) differentials in the overall amount of care received are less striking at the present time than before, but standardization by level of need demonstrates measurable discrepancies in health services provided to the disadvantaged compared with the nondisadvantaged; (3) the technical quality of health care for the disadvantaged is not strikingly poorer than care for the nondisadvantaged but, in view of demonstrable shortcomings in the quality of health care in general, this is not viewed as a positive statement; and (4) attempts to improve quality of care for the disadvantaged have not had the hoped for impact. In addition to continued evaluation of current innovative approaches for improving the quality of health care for the disadvantaged, four new avenues for further research are suggested; increased patient responsibility, increased consumer knowledge, financial accountability, and quality assurance activities. (Author)

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EVALUATING QUALITY OF HEALTH CARE FOR THE DISADVANTAGED: A LITERATURE REVIEW

PREPARED UNDER A GRANT FROM THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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PREFACE

This report was prepared partly with the support of the Rand Health Insurance Study grant (90008-D) from the Department of Health, Education, and Welfare. A significant aspect of the experimental portion of the Health Insurance Study will be to assess the quality of health care delivered to study participants with insurance plans of widely varying generosity. Moreover, the design of the study is such that families of low income constitute a relatively larger proportion of the study population than families of any other income level. A report that begins to bring together these two issues—quality of care measurement and health care for the disadvantaged—was considered a timely addition to the background documentation of the Health Insurance Study itself.

The specific genesis of this report was a talk given by the senior author to the American Public Health Association annual meeting in October 1974. That talk focused on new directions for policy and research in the area of health care for disadvantaged groups, but of necessity dealt only briefly with the underlying concepts and pertinent data. To do greater justice to the issue of the quality of health care for the disadvantaged, therefore, the authors subsequently brought together concepts, methodologies, and data in this area as a means of exploring possible avenues of future research, both within the Health Insurance Study in particular and within the health care services field in general. The report has been revised somewhat from a longer version appearing in the *Journal of Community Health* in September 1975.

SUMMARY

The problems of improving the quality of health care for all Americans and raising the level of health for the disadvantaged have been merged into the question, "Will improving the quality of health care delivered to the disadvantaged contribute to equalizing their health status?"

Review of the literature points to four basic conclusions:

1. Differentials in health status persist between the disadvantaged and the nondisadvantaged, often to a large degree.
2. Differentials in the overall amount of care received are less striking at the present time than heretofore, but standardization by level of need demonstrates measurable discrepancies in health services provided to the disadvantaged compared with the nondisadvantaged.
3. The technical quality of health care for the disadvantaged is not strikingly poorer than care for the nondisadvantaged, but, in view of demonstrable shortcomings in the quality of health care in general, this is not viewed as a positive statement.
4. Attempts to improve quality of care for the disadvantaged have not had the hoped-for impact.

In addition to continued evaluation of current innovative approaches for improving the quality of health care for the disadvantaged, four new avenues are suggested for possible further research: increased patient responsibility, increased consumer knowledge, financial accountability, and quality assurance activities. Because of the likelihood of only marginal changes in health status, rigorous evaluation of any experimental program is emphasized.

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I. INTRODUCTION

During the last decade, many attempts have been made by private and governmental bodies to improve the health of the American people. In general these efforts have focused on improving the health of members of disadvantaged groups and have included such diverse activities as building OEO health centers, developing maternal and infant care programs, and financing care for the elderly. During the last few years, a different movement, concerned with assuring high-quality care for all people, has produced efforts such as quality assurance activities in health maintenance organizations, the Professional Standards Review Organization program, and the medical care evaluation program of the Joint Commission on the Accreditation of Hospitals.

Consideration of these two issues—improving the health of disadvantaged groups and improving the quality of care for all people—has led to two policy-relevant questions: "Can the health of disadvantaged groups be substantially improved by assuring that a high quality of care is delivered to them?" and "Can the quality of care delivered to disadvantaged groups be improved?" The purpose of this report is to review some available data pertinent to both these issues and to suggest some ideas for future research.

After a brief overview of the measurement of quality of health care (Sec. II), the report discusses a series of questions in the following sections:

III. Health status of the disadvantaged as compared with the nondisadvantaged;
IV. Utilization of health care services (quantity of services);
V. Quality of health care in general,
VI. Quality of health care for the disadvantaged in traditional and innovative settings;
VII. Efforts to improve the quality of care.

Section VIII discusses some broad conclusions derived from this review and some avenues for future research.

II. THE MEASUREMENT OF QUALITY OF HEALTH CARE

The impact of quality of care on health must be placed in some perspective. Health is influenced by five constellations of factors: genetics, environment, patient behavior (much of which is not currently under the control of the personal health care system), public health, and the quality of care delivered by the provider in the personal health system (Fig. 1). In this formulation, a provider is any professional who makes independent decisions with regard to health care delivery, including dental and optometric services.

Quality of care is in turn influenced by two other sets of variables: system characteristics and provider competence. System characteristics include as key variables patient knowledge, financing of health care, organization of health care, and the number, kind, and distribution of providers. Provider competence includes provider personality, knowledge, and behavior as important variables. While quality of care is a necessary element to achieving good health, it is by no means sufficient; indeed, improving the technical quality of care to its maximum level may produce only marginal benefits, in view of the impact on health of the other variables.

For research purposes, quality of care should not be equated with quality of life; achieving quality of life ideals such as happiness, individual autonomy, or liberty is not the sole responsibility of the personal health care system. Neither should quality of care be equated simply with the manpower and facilities produced or available; more physicians per population does not necessarily imply better quality of care. Rather, quality of health care might be considered to have two components—the quality of technical care and the quality of art-of-care provided—where technical care includes the adequacy of the diagnostic and therapeutic processes, and art-of-care relates to the milieu, manner, and behavior of the provider in delivering care to and communicating with the patient.

The simple model in Fig. 1 shows how "general health" is affected by a number of variables, including quality of health services. Improving the health of a person or a population is similarly influenced by care quality, among other things (Fig. 2). The process begins with a group of people who possess a given set of characteristics (e.g., age, sex, knowledge of disease, and experience with the health system). Something occurs that is perceived as a threat to health. This in turn produces a perceived need for health service, usually of one of three types: preventive care, acute care, or chronic care.

Characteristics of the health care system, such as acceptability and availability, determine to a large degree whether perceived need will be translated into demand for health service. This demand can be directed toward an appropriate provider or an inappropriate provider (from either the patient's or health system's point of view, or both). Whether or not a person arrives at an appropriate or inappropriate provider is determined by a combination of patient characteristics and provider characteristics.

Once in the hands of a provider, whether appropriate or not, at least three actions can result: preventive services given; diagnosis made and treatment given; or, in many ambulatory cases, treatment given without establishing a diagnosis.

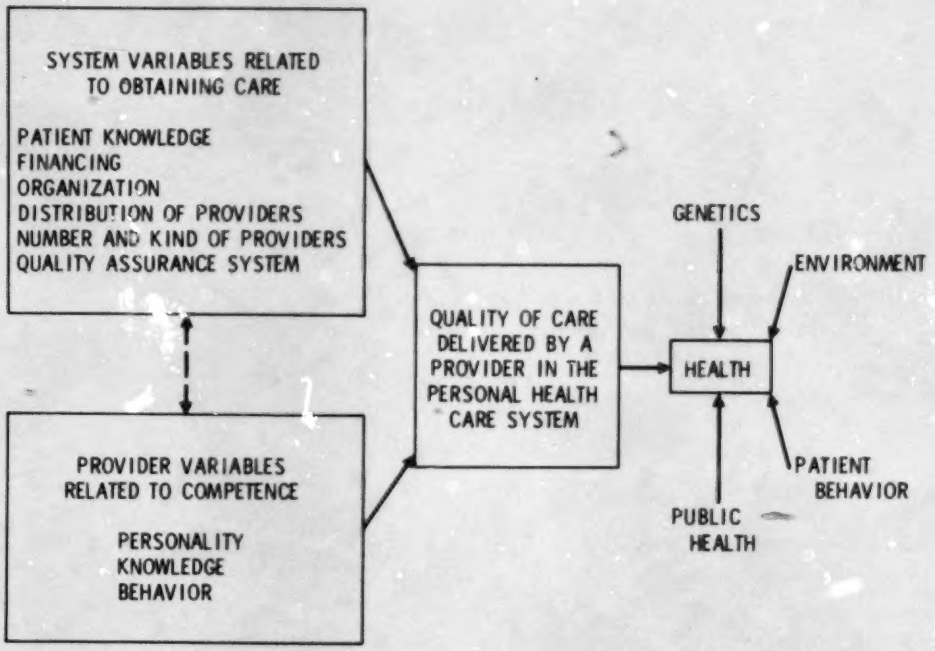

Fig. 1—The place of health care quality in determining level of health

Clearly, these actions are not necessarily final; any number of subsequent or secondary activities could be postulated as the patient is routed or rerouted through the health care system. Nevertheless, the actions stipulated in Fig. 2 (preventive services, diagnosis and treatment, treatment without diagnosis) are the points at which quality of care is assessed. Yet all circumstances encountered prior to arriving at these three actions determine the level at which the provider will function.

Intuitively, it is not reasonable to expect that major improvements in one of these three actions would dramatically improve health if some intermediate circumstances leading to those actions have greater impact on the behavior of the patient, provider, or health system in general. This may be particularly relevant to members of disadvantaged groups, who suffer from lack of knowledge about health and disease, lack of experience with the medical care system, lack of basic environmental amenities conducive to health, and lack of adequate financial resources.

Quality of Care Measurement

Quality of care can be measured by three different types of variables: structural, process, and outcome. *Structural* measurements are concerned with the descriptive characteristics of facilities or providers (e.g., clinics, hospital beds, physicians per population, nurses per physician, and so forth). Quality assessment, in its infancy, was concerned basically with structural factors, but these have been refined and to some extent superseded by other factors. The most well-developed of these are process measures.

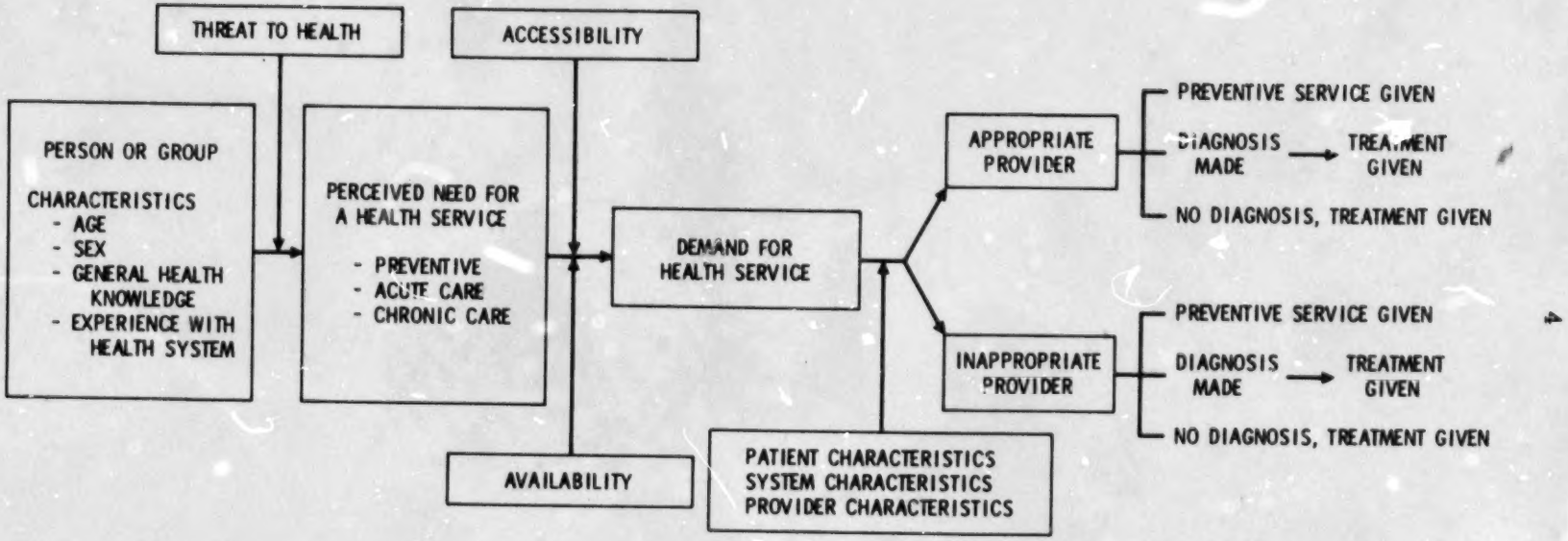

Fig. 2—The role of health care quality in improving level of health

Process measures are, in a sense, simply those that evaluate what a provider does to and for a patient and how well a person is moved through the health care system, either in a "macro" sense (e.g., from first symptom to seeking care to obtaining care) or in a "micro" sense (e.g., from arrival to departure at an emergency room or outpatient clinic). Using process measures alone to assess quality, however, introduces three distortions in the validity of quality of care assessment.

First, process adequacy is usually measured in technical terms through some written document, for instance a medical record or an insurance claim form. The art-of-care is never adequately recorded on such a form, resulting in the almost complete neglect of this component of the process of medical care. Second, the technical success of care may not be adequately documented in the medical record even in instances where high-level care was delivered. For instance, if one is going to operate on a patient with acute appendicitis, it is unnecessary and may be counterproductive to record absolutely everything done leading to the decision to operate, yet a valid evaluation of the quality of care given to such a patient may require such extensive documentation. Third, the manner in which process criteria have been selected can produce a quality assessment method of questionable validity. Physicians select as process criteria indicative of good care many items which have not been established by careful research. Invariably these criteria tend to reflect what is believed to be ideal practice regardless of whether available evidence supports this belief. When actual physician practices are measured, compliance with such process criteria is found to be low [1].* Thus, weaknesses in methods for selecting process criteria may produce a list of criteria which are only marginally relevant to actual practice conditions and which may lead to invalid measures of quality.

As quality assessment has moved into its adolescence, it has begun to concern itself with *outcomes*. Outcomes reflect what happened to the patient, in terms of palliation, treatment, cure, or rehabilitation. Outcomes of care, however, are determined to a large degree by the natural history of the disease and other factors extrinsic to the personal health care system, such as the patient's behavior. Studies relying on the measurement of outcome to assess quality of care may be as open to distortion as studies relying on process measurement, unless the more important extrinsic circumstances impinging on outcome are clearly understood and controlled for in the study design. Thus, if outcomes of care are to be used in assessing the level of care delivered to the disadvantaged, the validity of these measures for that population must also be established.

* Numerals in square brackets identify references listed at the end of this report.

III. HEALTH STATUS

The question of whether a difference in *health status* exists between the disadvantaged and the nondisadvantaged obviously is the touchstone of the issues raised in this report, focusing or diverting (depending on the answer) the attention of policymakers in one direction or another. The consistent and overwhelming evidence, of course, is that a pervasive difference continues to exist in the health status of disadvantaged vis-à-vis nondisadvantaged groups [2,3]. This is confirmed by data from the National Center for Health Statistics, e.g., by differences in white/nonwhite mortality rates for a wide variety of conditions, differences in days of disability and restricted activity, and differences in the prevalence of numerous acute and chronic diseases [4]. Koos related that individuals in the lowest socioeconomic class (Class III) reported more disabling illness, more nondisabling illness, and more symptoms per person than did individuals in Classes I and II [5]. A recent study by Conover showed a "clear and strong [negative] relationship" between level of income and certain chronic diseases, including arthritis and rheumatism, hypertension and other heart conditions, peptic ulcer, hernia, diabetes, and cancer [6]. Adolescents from economically disadvantaged groups, especially minorities, have a higher prevalence of many health problems (e.g., communicable diseases, dental pathology, mental illness) than do adolescents from other groups [7].

Although many examples of differentials in health status could be referenced, additional data on American Indians are cited here to highlight the differentials in health status between disadvantaged (nonwhite) and nondisadvantaged (white) populations [2]. Wallace detailed the markedly higher death rate from tuberculosis for Native Americans (Indians and Eskimos) as compared with that for the United States as a whole; the age-specific tuberculosis death rate for Native Americans exceeded that for all races by more than elevenfold for the ages 25 through 44 [8]. Similarly, among Indian and Eskimo children 1 to 14 years of age, the death rate from all causes was over 2.5 times that for all races; the largest differential was for gastroenteritis, where the death rate for Native Americans exceeded the overall U.S. rate for children 1 to 14 by more than sevenfold [9]. McDermott and his colleagues confirmed the poor health status of a group of Navajo Indians in the Many Farms-Rough Rock community [10]. This was reflected in high levels of tuberculosis and other respiratory diseases, enteric diseases, skin diseases, trachoma, and burns and other injuries often seen in primitive rural conditions. Infant mortality was also considerably higher than the U.S. average.

IV. UTILIZATION OF HEALTH CARE SERVICES

Conventional wisdom says that a difference also exists in the *amount* of health care received by disadvantaged and nondisadvantaged groups. Certainly there are differences in traditional measures, such as doctor/population ratios in cities and rural areas, which are used as proxies for the amount of care received. An evaluation of utilization of health services in Lubbock, Texas, indicated that only about 50 percent of the low socioeconomic status families obtained their most needed health services, compared to 90 percent of high socioeconomic status families. Despite the establishment of a neighborhood health center in a low socioeconomic status, ethnically mixed neighborhood and widespread information and communication efforts among neighborhood leaders and health staff, a hard core of non-users (perhaps 20 percent) was not reached [11].

Certain age groups appear to be at relatively greater risk of obtaining less than optimal amounts of care. Despite Medicare, the aged (particularly the economically disadvantaged among them) do not utilize health services in the amounts probably needed (with the possible exception of acute inpatient care). The elderly and (especially) the chronically ill or disabled often do not obtain the most appropriate care, irrespective of amount [12]. Poor adolescents are "less likely to receive adequate remedial and supportive health services" than other adolescents [7]. This may be true not only through lack of understanding of health problems and health needs or inadequate availability of health care services, but also because of pervasive social and economic problems that are not yet effectively addressed.

Nikias found a sizable differential in use of dental services under a prepaid dental insurance plan, according to social class (assigned by occupational level). Higher utilization was clearly associated with higher social class; the author concluded that "elimination or reduction of economic barriers . . . did not appear per se to result in equality of use of dental services for the different socioeconomic groups" [13].

On the other hand, Richardson's recent study of ambulatory care in a low-income area reaches a different conclusion; it could not confirm any major differences in the amount of care, in the delay before obtaining care, or in the first visit utilization rate for poorer people [14]. The relationship of poverty-related variables to amount of care, delay factors, and utilization was seen to be very intricate. For example, even in the absence of completely effective access to care, the poor exhibited a strong tendency to use medical care, although this was more true for serious than nonserious conditions. When a condition was serious, adults were more likely to seek care for themselves than for children. For nonserious conditions, preschoolers were more likely to see a physician than were members of any other age group. These patterns were not entirely consistent among various ethnic groups; for example, Puerto Ricans and Blacks tended to delay more than Whites of the same class.

Several factors may help to account for these results. First, Richardson's sample did not include many middle-class persons; hence, the basic comparisons were between the "more disadvantaged" and the "less disadvantaged." Second, the study was carried out in Brooklyn, where a relatively high degree of care is available. Third, the focus was more on acute illness than on preventive or chronic care.

With regard to preventive rather than curative care, Richardson found some differences by income group. Children of families below the poverty line were considerably less likely to have had vaccinations or dental care than were children of families with an adjusted current income more than twice the poverty level. By and large, however, income was a poor indicator of differentials in seeking or obtaining health care; differential utilization was most strongly correlated with race and ethnic group.

Other work is beginning to corroborate some of Richardson's findings. Comparison of utilization rates and patterns between a general population group in a prepaid program and a poverty group using an OEO center showed few differences [15]. Adult utilization rates for doctor's office visits, for example, were higher for the OEO population than for the prepaid health plan, especially for walk-in visits. Members of the OEO group had less delay in seeking care after onset of symptoms than did the health plan members. The authors conclude that "many aspects of care are similar when evaluated in a system where poverty groups have effective access to care, without financial and other barriers .... Much of the reported differences in the behavior of poverty populations relates to differential access to medical care" [15, p. 200].

A reconsideration of physician utilization and level of family income concludes that the relationship has diminished considerably over the past forty years [16], due primarily to decreasing use of doctors' services among high-income persons. The authors note, however, that physician use among lower-income classes is still especially sensitive to financing mechanisms, particularly out-of-pocket costs not covered by Medicare or Medicaid.

Finally, in reviewing NCHS Health Interview Survey data, Davis and Reynolds showed that low-income persons had increased their physician utilization to a level above that for high-income persons; adjusting for health status, however, resulted in higher utilization being associated with higher income [17]. The notion that Medicaid has helped to reduce income differentials in medical care utilization is supported by this evidence, but major access and financing problems remain for those persons ineligible for public assistance. Furthermore, differences in the kind of utilization between low- and high-income persons persisted in areas such as use of general practitioner care versus specialist care and use of the hospital outpatient clinic versus the physician office setting. A recent report from the Center for Health Administration Studies notes a utilization differential based on income when level of need is held constant; for a given level of severity of illness, lower-income groups and Blacks have lower utilization [18].

The issue of differentials in the quantity of care received by disadvantaged vis-à-vis nondisadvantaged groups is not yet settled. With the advent of Medicare and Medicaid, the gap between the disadvantaged and the nondisadvantaged in terms of amount of care received is closing (when measured by population utilization rates), but it is not yet closed. The far more critical issue, however, is measuring the quantity of services received relative to need. Results of such measurements indicate that *relative to need*, the disadvantaged receive fewer services.

V. QUALITY OF HEALTH CARE SERVICES IN GENERAL

That a difference exists in the *quality of care* delivered to disadvantaged and nondisadvantaged groups is neither immediately apparent from nor supported by available studies, although it is a widely accepted assumption. A better premise might be that much of the care received by all Americans demonstrates deficiencies. Several studies done over the last two decades point to less than optimal care in a variety of settings.

A study of the quality of care provided by various medical groups belonging to the Health Insurance Plan (HIP) of New York showed that five of the 26 groups fell into the lowest level of quality of care; the records of patients in those groups were poorly kept, and they received inadequate physical examinations and histories [19]. From a review of selected records at four different hospitals [20], Rosenfeld judged 50 percent of the patient care fair or poor in the two teaching hospitals, and 75 percent was so judged in the two nonteaching hospitals.

Peterson reported that 39 of 88 general practitioners in North Carolina fell into the lowest two categories (on a scale of five), indicating at best only mediocre care [21]. Using specific criteria to study a group of new patients in a general medical clinic, Huntley found that 15 percent of the routine laboratory tests were not done and that between 23 and 34 percent of the abnormal laboratory tests were not followed up [22].

Several studies have indicated excessive and perhaps unnecessary amounts of surgery, including operative procedures in general [23], appendectomies [24, 25], and tonsillectomies and adenoidectomies [26]. Brook found that, of 296 consecutive patients presenting to a city hospital with hypertension, urinary tract infection, or ulcerated lesion of the stomach or duodenum, only 27 percent received a level of quality of care judged acceptable by the staff of the institution [27].

Payne and Lyons abstracted a random sample of patient charts in non-Federal hospitals in Hawaii and compared these against criteria lists generated by the physicians themselves [28]. The physician performance index (PPI), which was a weighted index of these criteria, averaged about 71 for hospital cases (with 100 the highest score possible). The most important variable in the hospital setting in explaining a higher PPI was whether the provider was a "modal" specialist. The "modal" specialist was a physician specifically trained to treat the conditions before him; for example, a urologist would be a modal specialist for kidney stones, not for ulcerative colitis. Hospital size was also important, with larger hospitals providing slightly better care. Payne and Lyons also abstracted a sample of physician office charts [29], for which the PPI was 41. The modal specialist variable was again the most important in explaining differences in quality in the ambulatory setting.

Patient satisfaction is a crucial "art-of-care" factor of quality assessment which only lately has received much attention. Lebow's recent review of consumer satisfaction investigations found mixed results [30]. High satisfaction levels were found in a number of studies in a variety of settings; several studies registered low satisfaction along one or more parameters. A critical component in satisfaction was doctor-patient communication (explanations of illness and treatment, amount of information received, general communicativeness). This has significant implications for the

quality of care given to the disadvantaged, with whom providers may have relatively greater difficulties communicating because of language and cultural barriers. In addition, Hulka and her colleagues have studied patient satisfaction in a low-income neighborhood; they reported favorable attitudes toward personal qualities of providers and toward professional competence, but dissatisfaction with cost and convenience factors. Relatively higher satisfaction levels on all dimensions were associated with higher educational and occupational levels, smaller family size, and regular or recent experience with the health care system [31].

Finally, the introduction to a report to the Center for Study of Responsive Law on health care, quality, and professional self-regulation has put the quality issue into perhaps the most strident terms: "Few areas of specialization have been so amply documented in their gap between the presumption and performance of expertise and delivery than has medical care .... Conditions of medical care are often criminally negligent especially for the poor and even at times for the relatively affluent ..." [32]. Such a harsh view of American medicine, needless to say, is not universally shared, although it proceeds from the same type of documentation as cited above.

One might infer, then, that the quality of care delivered to the public as a whole has had and continues to have imperfections and inadequacies of varying degree. These deficienceis may be basically structural, involving maldistribution or misuse of manpower and other resources. They may be centered more in the process of health care delivery, involving omission of necessary care or commission of unnecessary work. Finally, such deficiencies may be related more to ultimate health status, as when single-organ disease, for example, is emphasized to the detriment of whole-organism illness. Health care received by the disadvantaged is subject to the same deficiencies and inadequacies. Steps undertaken to correct such deficiencies in general could be expected to have an effect on care for the disadvantaged as well, but that is clearly a long-run phenomenon.

VI. QUALITY OF HEALTH CARE SERVICES FOR THE DISADVANTAGED

The studies reviewed above relate principally to generic issues in quality of care assessment, generally without reference to the population groups receiving that care. The crucial question for this report, however, is whether the disadvantaged receive *worse* care than that provided to the rest of the population. Information on this subject is meager and conflicting; consequently, conclusions are basically inferential. Since it is not our purpose here to review exhaustively all the literature on care for the disadvantaged, these conclusions are based on some representative studies that may be indicative of systematic patterns or trends.

Studies comparing presumed quality of care and purely structural factors (e.g., physician characteristics) lend themselves to the conclusion that quality is lower for disadvantaged groups. In a review of medical care in outpatient settings, Shortridge noted that high-quality medical practice was associated with length of training, high proportion of specialists to total physician population, and relatively younger age of physicians [33]. Insofar as disadvantaged groups obtain care from physicians with less training or in locations having fewer specialists or older physicians (e.g., inner cities, rural states), they are at risk to lower-quality care.

This is corroborated by Coe and Brehm [34], who evaluated physician performance in providing preventive health care services to elderly patients. Doctors were better at recognizing normal conditions relating to aging (e.g., reaction time decline) than at recognizing disease-related conditions (e.g., atrophic gastritis); furthermore, when faced with a condition in an older patient about which there was diagnostic uncertainty, doctors tended to guess that the condition was part of the aging process and not in need of correction. Younger specialists were significantly better at identifying disease-related problems than were older general practitioners, and those physicians who could identify disease-related conditions more accurately were also those who provided the best preventive care.

A recent government report indicated that less than fully qualified foreign medical graduates staff many different types of State-financed institutions where, presumably, the lower-income classes predominate in the patient population [35]. This is particularly true of State mental hospitals, where foreign-trained staff often form the majority of the psychiatric staff. Indeed, relying on less than fully qualified foreign medical graduates to deliver care in so-called "shortage" geographic areas or specialties is a prominent issue in any assessment of differentials in the quality of care delivered to the disadvantaged.

Reports on prescription drugs from a variety of sources indicate that the elderly and/or low-income groups face unnecessary or inappropriate prescribing patterns [36,37]. The consequences are twofold: a lower quality of care (as measured by prescribing of nonacceptable drugs or excessive prescribing) and a heavy burden in medical expenditures, even in the face of Medicare or Medicaid.

Brook found no significant correlation between whether a patient was on Medicaid and the quality of care he received in a big city hospital; both the poor and the working class received a low level of quality of care [37,38]. Taken together, these studies appear to confirm that disadvantaged groups receive relatively poor care.

Some reports are more reassuring, albeit in a rather indirect way. For example, Lewis observed that, in Kansas, more surgery was being performed in areas where there were more surgeons [39]. Much of this excess surgery seems to be unnecessary. Since poor people tend not to live in areas having a surplus of surgeons, they are peculiarly protected. Similarly, Kessner and his associates have reported an almost tenfold higher rate of tonsillectomy in children using partnerships or small groups compared with children using public clinics; they suggest that "ability to pay, rather than medical need or appropriateness of treatment" may be the deciding factor in whether the child was treated, i.e., had a presumably unnecessary tonsillectomy [40].

In cases of head and neck cancer, upper-class patients seem to receive more personalized care but less rapid referral to appropriate specialists than middle- and lower-class patients. Insofar as obtaining specialist care as quickly as possible is the best medical care for this condition, the middle- and lower-class patients are receiving a higher quality of care [41]. In a study of Teamster families in New York City, Morehead observed that care was better for patients hospitalized in university or city hospitals [42]. Proprietary and community hospitals, which are likely to be frequented to a greater degree by the lower middle class and/or working class and by the poor to a lesser degree, provided the worst level of care. Finally, a study by Lyons and Payne compared the quality of care for elderly and nonelderly patients in 15 diagnostic categories [43]. They found no overall, consistent evidence to show that hospitalized elderly patients (who were presumably poorer patients) were treated with any different level of personal medical care than the younger adult patients.

VII. EFFORTS TO IMPROVE THE QUALITY OF CARE

The studies cited in the previous section of this report were performed essentially to measure the quality of care provided. There was no attempt, experimantal or otherwise, to improve or change the care delivered to disadvantaged groups. Several studies have attempted to compare the quality of care given in innovative settings with the care given in traditional modes of health care delivery. Others have attempted to improve quality of care directly and then measure the resultant effect. By and large, these studies have mixed findings, with no clear-cut evidence that these innovative programs have improved either the quality of medical care or the health status of members of disadvantaged groups.

TRADITIONAL CARE INTRODUCED IN AN UNDERSERVED AREA

The intensive efforts of McDermott and his associates to bring technologically better care to the Many Farms-Rough Rock Community is particularly instructive [10]. They attempted to change the health of this Navajo community through the introduction of a clinical physician system of primary care. They achieved a definite reduction in the recurrence of active tuberculosis and a reduction in otitis media, but, for example, little or no change in the pneumonia-diarrhea complex (which remained the greatest single cause of death and illness). Even at the end of the study, the infant mortality rate persisted at something like three times the national average. The authors stated that housing and living conditions were far more important in predicting whether the infant mortality rate would drop (and by how much) than was the provision of physician-oriented personal health care. They also noted that once such a system was implemented, the community would demand this type of care irrespective of need; its removal in favor of alternative approaches to improving health was virtually impossible.

CHANGES IN EXISTING TRADITIONAL PROGRAMS

As evidence of improvements in care as measured by process criteria, Fletcher demonstrated that the addition of a follow-up clerk to an emergency room serving a large disadvantaged population improved compliance among ER patients requiring follow-up [44]. An attempt to improve care to the children of a mainly indigent, nonwhite group through expanded use of ambulatory nursing care was reported by Starfield and Sharp [45]. They showed some positive effects of nursing care of families with enuretic children, by facilitating the acceptance and implementation of a complicated and long-term regimen for medical management of bedwetting.

Pozen has analyzed the quality of care given in outpatient clinics in a city hospital [46] where many patients were poor. Patients and house staff were assigned in a nonbiased manner to one of three clinics—education-oriented, administration-oriented, and control. After approximately six months, no differences were found in

the process or outcomes of care obtained by these patients. Neither additional education provided by senior physicians to the house staff nor administrative controls appeared to improve the less than optimal level of care received by these patients.

PREPAID AND COMPREHENSIVE HEALTH CARE PLANS

Evaluations of the Health Insurance Plan (HIP) of New York have been carried out by Shapiro and others. Perinatal mortality and prematurity rates of HIP subscribers were compared with those of patients treated by private physicians [47]. HIP patients had significantly lower prematurity and perinatal mortality rates in almost all comparison groups, including poor Blacks. However, even though the perinatal mortality rate of Blacks was lower in HIP, it was still higher than the rate for a matched population of whites. A second study compared mortality patterns of two patient groups on Old Age Assistance, one group using HIP and the other using the welfare medical care system [48]. After the first year, in which mortality was the same for both groups, mortality became statistically lower in the HIP group. The third study examined mortality following discharge from a hospital for patients who had suffered a heart attack [49]. Members of the lower socioeconomic classes tended to have a higher death rate than the other classes. They were also likely to have high blood pressure after hospitalization; this lack of blood pressure control appeared to result from the patients' failure to take medications, due both to poor compliance and failure to prescribe. These HIP studies, then, tend to indicate the following: (1) the outcome of care for lower socioeconomic classes in HIP was better than that for the same classes not enrolled in HIP; and (2) the outcome of care for the disadvantaged in HIP was poorer than that for the nondisadvantaged in HIP. Perhaps this latter effect is due to a differential in quality of care, but it is as likely (or more likely) to be the result of greater difficulty in achieving medical care objectives in a deprived population for which long-term health is not the most pressing immediate priority.

Comprehensive or continuous care has often been promoted as a means of producing better care for disadvantaged groups than episodic, fragmented care. The efficacy of the comprehensive approach has been called into question by a number of studies in the last few years. For example, Gordis and Markowitz studied comprehensive versus traditional care for first babies of teenage mothers [50]. Comprehensive care infants received all preventive and therapeutic care in a hospital-based program staffed by pediatricians, public health nurses, and social workers. Traditional care infants obtained care from emergency rooms and well-baby and outpatient clinics. One year after delivery, no difference was found between comprehensive care and traditional care infants with respect to completion of immunizations, utilization of medical resources, or selected morbidity or mortality indices.

In the second study, patient compliance with physician recommendations (daily oral penicillin prophylaxis for rheumatic fever) was hypothesized to be favorably influenced by continuous care [50]. Continuous care patients received all medical care, even for problems unrelated to rheumatic fever, from the same two physicians. Traditional care patients continued to receive specialty clinic care, where they were seen by different physicians, and were referred elsewhere for all problems unrelated to rheumatic fever. After 15 months, no differences were seen between the comprehensive care and traditional care groups, either in proportion of noncompliance or

in internal shifts in compliance during the study. Thus, neither study was able to demonstrate that comprehensive, continuous care was more effective than traditional ambulatory care (or, alternatively, that traditional care was any worse than comprehensive care).

Bullough assessed the impact of two new comprehensive clinics in low-income neighborhoods in Los Angeles, one a multipurpose health center and the other a Child and Youth Clinic [51]. The basic issue was whether the clinics reached the eligible residents with more preventive care; the only impact appeared to be in terms of immunization levels for children in one C&Y neighborhood. Although the author suggests that perhaps the clinics simply needed more time to reach more people, she also notes that the problems of poverty, discrimination, and unequal distribution of health services may be in need of much more long-range and basic solutions than simply new clinics.

Welfare Medical Care [52] describes an experiment comparing the care received by patients enrolled in a comprehensive medical clinic at a university hospital and by a control group who utilized other available sources of care. Findings related to the quality-of-care issue are generally mixed, with no differences observed in perinatal or overall mortality rates. Some differences in problem-solving for urinary tract infection were noted, with the experimental group having received better care.

BROAD-BASED PROGRAMS UNDER GOVERNMENT AUSPICES

The literature on the impact of Medicare and Medicaid, much of it related not to quality but to cost, might run to several volumes. Insofar as Medicare or Medicaid patients must turn to the traditional medical care system for health services, they will be subject to whatever deficiencies exist in that particular setting. Inadequacies persist within the Medicare system in terms of benefits assigned and services received by nonwhites as compared with whites. Studies have been cited showing less adequate utilization for minorities, especially in light of poorer health levels among nonwhite aged persons [53].

Bellin and Kavaler examined various components of the New York City Medicaid experience for poor quality and fraud (discrepancies between services billed and actual work performed) [54]. Quality of dental care was assessed through a repeat dental examination. Of almost 1200 Medicaid patients receiving this examination, 9 percent were found to have evidence of poor-quality care; in an additional 9 percent, possible fraud was discovered. A similar study in optometry demonstrated that 17 percent of the patients received unsatisfactory care; care was possibly fraudulent in an additional 2 percent. Because of a low response rate, it was impossible to generalize from these data; no comparative data were available on other socioeconomic groups treated by private doctors.

TARGETED PROGRAMS UNDER GOVERNMENT AUSPICES

Three related types of programs launched in recent years are addressed to the needs of specific subgroups within the disadvantaged population. The first of these is the OEO Neighborhood Health Center; the others are maternal and child health

activities. Evidence purporting to establish the efficacy of these approaches is conflicting.

OEO Health Centers

One early evaluation of an OEO Health Program integrated into a Kaiser Foundation medical care program described some positive results of the projects [55]. Basically, utilization of services for the indigent population approached that of the general population served by the existing medical care system. In particular, well-baby and well-child care were markedly improved for the OEO population, and the OEO membership received twice the number of immunizations per office visit as the general health plan membership.

An OEO Neighborhood Health Center in Massachusetts recorded high utilization by the low-income community [56], for both curative service and preventive services such as polio immunizations. Major positive changes in patient attitudes, satisfaction, and knowledge of health and health care were found. The authors note that "a major effect of a Health Center . . . may be to increase the continuing and informed demands by the poor for significant improvement in the health care system available to them, especially with respect to early diagnosis and treatment, preventive care, and concern for 'art-of-care' factors" [57, p.239].

Evaluation of the quality of care per se in OEO Neighborhood Health Centers has been conducted largely by Morehead. One study on 24 centers utilized a review of adult medical, pediatric, and obstetric records [58]. Data are not yet available from the clinical audit, but major deficiencies in compliance with standard process criteria were uncovered in the baseline audit. These included lack of routine hemoglobin and urinalysis determinations in children, failure to complete scheduled immunizations and tuberculosis tests, and failure to record sufficient information about the delivery period and methods of contraception in obstetric cases.

In the second study, quality of care was assessed at 35 OEO Centers and compared with that given in medical-school-affiliated hospital outpatient departments, private group practices, health department well-baby clinics, Maternal and Infant Care (M&I) projects, and Children and Youth (C&Y) projects [59].* The results are summarized in Table 1. Despite certain limitations in the study design, the data seemed to indicate that OEO centers compared reasonably well with the other settings. Except for the highly specialized M&I and C&Y projects, differences among delivery sites were quite small.

Morehead and Donaldson have completed a more recent appraisal of 40 OEO clinics; the majority were performing satisfactorily in the medical, pediatric, and obstetric-gynecological service areas [60]. Ratings were based on the screening methodology developed in HIP studies, using weighted measures of record completeness, diagnostic management, treatment and follow-up, and overall patient care. The proportion of centers providing unsatisfactory care, according to service specialty, was as follows: pediatric care, 31 percent; adult medical care, 25 percent; gynecologic care, 12 percent; and obstetric care, 4 percent. When quality of care was unacceptably low, four problem areas emerged: lack of appropriate medical care systems, lack of relationships between clinics and hospitals, poor performance by

* The M&I and C&Y programs are described under the next heading, Other Categorical Programs.

Table 1

COMPARISON OF QUALITY OF CARE DELIVERED IN OEO NEIGHBORHOOD HEALTH CENTERS AND OTHER HEALTH CARE SETTINGS, BY TYPE OF SERVICE

Health Care Setting	Quality of Care Rating*			
	Overall Rating	Obstetrics	Adult Medical	Pediatrics
OEO centers	107	121	112	90
Hospital outpatient departments	100	124	94	83
Group practices	103	122	102	84
Well-baby clinics	—	—	—	93
M&I projects	—	138	—	—
C&Y projects	—	—	—	133

SOURCE: Ref. 58.

*Standard of comparison is overall average for the medical-school-affiliated hospital outpatient departments, counted as 100.

individual physicians, and lack of patient compliance. Positive relationships were seen between higher ratings and degree of affiliation with back-up hospitals, and higher proportion of specialists to generalists. The authors caution that this high proportion of centers with satisfactory ratings should not lead to complacency, because services needing improvement were uncovered in all centers (e.g., nonperformance of follow-up laboratory tests and x-rays).

Gordis has shown that the introduction of an OEO Health Center in a selected Baltimore census tract was associated with reduction in rheumatic fever in that census tract, compared to the rate of rheumatic fever before introduction of the clinic and compared to control census tracts in both the before and after periods which did not have the advantage of OEO Health Centers [61]. Positive findings from this study, however, may have been related to the introduction of new doctors and other personnel rather than to the continuous care concept as practiced in an OEO setting or to increased quality of care; furthermore, it was an isolated finding, neither replicated nor generalizable.

The critical conclusion is that these major government programs have not produced substantial changes in the technical quality of Health Center care as compared with care given in hospital outpatient clinics (which has been the subject of much criticism). Clearly, these programs did increase the accessibility, availability, and quality of such services. Moreover, they may have had some impact on the art-of-care provided, but this factor remains unmeasured.

Other Categorical Programs

The Maternal and Infant Care Program was launched in the mid-1960s to provide high-quality prenatal care to lower-income women. Over 50 such clinic projects now exist, and they are being evaluated by Hebel and his associates. The evaluators

began by following a selected group of 13 M&I projects and comparing pregnancy outcomes for their patients with similar data on non-M&I patients [62]. Early findings reported as risk-factor-adjusted prematurity rates do not show any measurable differences in outcomes of pregnancy. Prematurity and perinatal mortality dropped also in areas not served by M&I programs, and the data did not support a cause-and-effect relationship between establishment of an M&I program and reduction in perinatal mortality. A detailed look at one Maternal and Infant Program at New York Medical College, using outcome data collected during the 10 months before program initiation and after one year of program operation, had more positive results. A 29 percent drop in prematurity and a 43 percent decrease in early infant mortality were found, and it was suggested that these reductions were the result of better medical care [63].

Another major Federal program providing health care to the poor is the Children and Youth (C&Y) Program, which is being studied by Minnesota Systems Research, Inc. Data from about 20 centers during the first two years of operation showed decreases in episodic dental conditions, visual refraction error, and hospital utilization, and an increase in the number of examinations ending with a well-child label [64]. A more detailed examination of one C&Y Program produced less positive results. All patients who had been found anemic in routine examinations were interviewed at the end of a follow-up period and their charts reviewed to determine whether a diagnosis had been established by their physicians and appropriate therapy begun. Only 14 of the 53 low-hemoglobin patients were recognized, diagnosed, treated, and followed adequately. At least 26 of the 53 patients remained anemic [65].

PEER REVIEW ACTIVITIES

Early findings from the New Mexico Experimental Medical Care Review Organization (EMCRO) suggest that it had some positive impact on quality of care given to the disadvantaged. Guidelines were promulgated by the State EMCRO in 1972 for acceptable and nonacceptable circumstances (generally diagnosis) for giving certain injections (e.g., vitamin B_{12}). This action noticeably reduced the incidence of unwarranted injections, thereby resulting in an improvement in quality of care to patients in the Medicaid population [66]. Similarly, OEO physicians in a Neighborhood Center, noting that the drug indomethacin was being used too frequently in treating arthritis, developed criteria for acceptable use of the drug [67]. A subsequent audit demonstrated that indomethacin usage decreased 25 percent after the initial audit.

Roemer and Gartside reported the effect of Foundation for Medical Care (FMC) activities on care for welfare beneficiaries in several counties in California [68]. The proportion of surgical procedures done by "properly qualified" practitioners was found to be higher in the FMC area (San Joaquin) than in a comparable county lacking such a foundation. It was concluded that the presence of the medical foundation had a positive effect on the "behavior of physicians in private practice" and, by inference, on the Medi-Cal patients they served.

Another study of the impact of FMC review mechanisms on provider behavior found a significant relationship between the proportion of billing claims adjusted

and subsequent changes in physician services to Medi-Cal recipients [69].* The greatest impact of the peer review process was seen in six categories of injections (Imferon, Depo-Medrol, vitamin B_{12}, penicillin, streptomycin, and all injections), four physician utilization categories (all office visits, all hospital visits, brief follow-up visits, routine follow-up visits), and three laboratory procedures (routine urinalysis, colorimetric hemoglobin, and blood glucose).

* Medi-Cal is the name used in California for Medicaid.

VIII. DISCUSSION

CONCLUSIONS

From the review of the literature, four basic conclusions seem to be justified. First, differentials in health status between the disadvantaged and the nondisadvantaged persist. These differentials are real, measurable, and often quite large, despite increasing efforts to bring more and better health services to the disadvantaged. Because these inequalities continue to exist, the question of whether health status can be enhanced through improvements in the quality of care is neither a false nor a trivial issue.

Second, differentials in the amounts of care received are narrowing. Programs and organizational arrangements aimed at increasing access to medical care appear to be successful in bringing greater equality in health services utilization to the disadvantaged, at least as measured in rather broad terms. When utilization is standardized for need, however, differences in the quantity of acute, preventive, and chronic health care services received become apparent. Whether financing mechanisms, institutional arrangements, new delivery settings, comprehensive care, and/or new types of professional and paraprofessional manpower will meet the challenge of providing appropriate care in the amounts needed remains to be seen, but further speculation on these access problems falls outside the scope of this review.

Third, the evidence does not support the hypothesis that the technical quality of health care provided to the disadvantaged is uniformly or universally poorer than that provided for nondisadvantaged persons. In some settings, or for certain groups within the disadvantaged population, quality may even be better. This is not an optimistic conclusion, since the quality of technical health care provided for the American people in general suffers from a number of deficiencies, ranging from omission of necessary diagnostic and follow-up procedures to overuse of medications and therapeutic procedures to poor physician-patient communication and interaction. To say that the quality of care for the disadvantaged compares reasonably well with a less-than-optimal product is not a particularly positive statement.

Fourth, attempts to improve the technical quality of health care for the disadvantaged appear to have had little positive result; by extension, therefore, such attempts have also had little impact on health status. For instance, attempts to improve the technical quality of health care, either for all persons or for the disadvantaged alone, through financing mechanisms, innovative modes of delivering health care, categorical programs, or administrative and educational efforts, have been, at best, only marginally successful. Such efforts may have been intended to address other health care problems and may have done so successfully; but insofar as they were expected to influence technical quality, they have not fulfilled their promise.

No one approach has been unequivocally shown to lead to consistent and permanent improvements in quality of medical care. Some innovations (notably the prepaid health plans and OEO Neighborhood Health Centers) may have had a slight positive, although geographically limited, impact on the technical quality of care provided. Their influence on the art-of-care provided may have been greater, but no

systematic information on this point has been collected. By and large, therefore, improvements in the technical quality of care have not occurred; whether such improvements, had they occurred, would have resulted in better levels of health for members of disadvantaged groups remains an unanswered question, especially in view of the impact of factors other than quality in determining health status.

TOPICS FOR NEW RESEARCH

These conclusions can be interpreted as a challenge to current concepts of improving either the quality of care given to, or the health status of, disadvantaged persons. As documented in this review, the old concepts, even in modern dress and accompanied by technological support, have failed to produce satisfactory solutions to these problems. In our opinion, new approaches not oriented to the usual doctor-patient relationships or middle-class values, and not grounded in technological advance, should be explored. In other words, research into the effects of new approaches would seem to be warranted by the failures of earlier efforts to address issues of quality of care for the disadvantaged appropriately. Several topics for research, which would seem to be especially pertinent to the issue of quality of health care for the disadvantaged, are suggested below, under the rubrics of patient responsibility, improved consumer knowledge, mutual financial accountability, and quality assurance activities.

There is, in general, an absence of information regarding the likelihood that research into any of these areas would concretely establish their efficacy for improving either the quality of health care (in particular) or the health status (in general) of the disadvantaged.* Simply by virtue of their novelty, these suggested avenues of research are not undergirded by irrefutable statistics or scientific dogma. They are, so to speak, orthogonal to tradition. We have taken the liberty of suggesting them because that is preferable to simply concluding that the technical quality of care for the disadvantaged is not improvable by activities pursued in the past.

Increased Patient Responsibility

Attempts to give more responsibility to the patient imply a much stronger investment in making the patient-doctor relationship a truer partnership in health. The concept of "prospective medicine" [70], together with the Health Hazard Appraisal (HHA) [71], is one topic for research germane to the problem of delivering high-quality care to the whole patient. Prospective medicine places a premium on joint doctor-patient efforts to identify and reduce long-term risks to life and health. The key to HHA is forecasting from average to personal risks and from present to future risks. HHA uses the concept of risk factors that are individualized to each patient as a tool for explaining health problems and motivating patient compliance wiith recommendations and therapy. The utility of this approach as applied to the special needs of disadvantaged groups could be explored.

The HHA approach might be evaluated together with two other innovations which would simultaneously increase patient responsibility. First, the patient or his

* It might be argued, for example, that the disadvantaged are less likely than other population groups to benefit from changes requiring greater sophistication on the part of patients.

family could be given responsibility for keeping and maintaining his own record [72]. Given the increasing mobility of the American people, including the disadvantaged, and the partitioning of health care into many different settings, health records, which are a basic necessity for quality health care, are less readily available than heretofore. That the patient may be more likely to be able to produce his medical record than is the medical record room of a health facility is a serious charge against the medical information "system" as presently constituted. A side benefit of the patient's retention of his own record may be to improve its legibility and organization.

Second, the practicality and applicability of doctor-patient "contracts" should be assessed. Such contracts focus on health-related outcomes and detail specific actions required by both the physician and the patient to achieve these outcomes. The actions are written down and agreed to by both provider and patient. For many disadvantaged persons, especially those with chronic conditions, this approach might prove to be a fruitful way to change short-term (perhaps insufficient or inappropriate) health goals into better long-term health goals.

Increased Consumer Knowledge

Public knowledge should be expanded to enable the consumer to distinguish an appropriate from an inappropriate provider. The work by Payne [28,29] has shown that the choice of the appropriate provider (i.e., the "modal" specialist) was the most important determinant of high-quality care in both the ambulatory and the inpatient setting. Ways of supplying information to the public which would help direct a person with a specific set of symptoms to the appropriate physician should be developed.

In terms of larger population groups, "catchment area triage" might be explored as an attempt to direct persons to appropriate health care delivery settings (public health clinics, neighborhood health centers, hospital emergency rooms, private practitioners, specialty groups, or whatever). This type of triage system would be based on perceived health needs and concern for efficacious care at the least complex level for the least possible cost. Although these information and triage systems are appropriate to the needs of all persons, experimental programs for targeted disadvantaged groups (inner-city residents, for example) might usefully be initiated on a trial basis.

Financial Accountability

Mutual provider/consumer financial accountability is essentially the notion that providers would be at financial risk in proportion to the relative health of their patient population. The incentive for the provider is to maintain health, prevent disease, and cure illness at the earliest or simplest possible stage (within the constraints of variables outside the health care arena). The corollary notion is that consumers are also accountable to providers to cooperate and comply with preventive or curative measures outlined for maximizing health. Ways of achieving this type of mutual accountability should be explored, perhaps through the extension of prepaid group practice or the Foundation for Medical Care concept.

Quality Assurance

Preliminary evidence, as in the New Mexico and San Joaquin Foundations for Medical Care, shows that even very primitive steps in peer review can improve the quality of care. Questions of how much or to what extent quality can be improved by this method have not been answered. To date most improvements in quality have been produced by decreasing the number of injections. However, if peer review on an areawide basis is to have major impact on quality, then better ways of measuring quality must be developed. In particular, measures of quality of care must give equal consideration to art-of-care factors and technical factors. Furthermore, methodologic problems must be resolved, such as the following:

- What type(s) of data should be collected?
- From what source(s) should the data be collected?
- What is the most cost-effective way of returning the data to providers so that their subsequent behavior will be modified?

CONCLUSION

As noted above, little evidence is available to support the full implementation of any of these ideas. Thus, any research program based on the concepts suggested above must be subjected to a rigorous experimental evaluation. This will require the careful consideration of both the internal validity of the evaluation and the external validity of the program. Concepts which are shown not to work by these evaluative techniques must be relinquished, and research programs which prove to be inappropriate, inadequate, ineffective, or inefficient must be abandoned. On the other hand, programs which assure a high level of quality of health care and at the same time contribute to an imrovement in health status should be vigorously supported and, within the constraints of costs, implemented on a national scale. Changes in the health system which improve the quality of care received by the disadvantaged are likely to have similar effects for the rest of the American people; benefits accruing to the disadvantaged from these changes will point the way to benefits for the entire nation.

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